

AMENDMENTS TO THE SPECIFICATION

Pages 6-7, bridging paragraph, amend the paragraph as follows:

The present invention is based on the utilization of the volume contraction of the polymer during the very polymerization process, so that the monomer layer is during the polymerization in contact with the surface of at least one rigid flat plate, or is preferably sandwiched between two layers of thermally and mechanically stable, rigid materials, for example glass. In such a manner, strains are generated in the material in the plane, determined by the rigid boundary surfaces, and causing the corresponding deformation of otherwise isotropic macromolecules. Since this deformation of the macromolecules is effected during the polymerization process, the cross-polymerization permanently freezes the molecules in their deformed state, which is of the utmost importance for the long-term and thermal stability of the birefringent films, manufactured in such a manner. The term ~~[[<freezes>]]~~ "freezes" should be interpreted in the sense of ~~[[<hardens>]]~~ "hardens" or ~~[[<becomes rigid>]]~~ "becomes rigid" respectively. The very deformation of the macromolecules effected with cross-polymerization, endows the present invention with

~~substantial~~ substantial advantages in comparison with hitherto known methods of stretching preformed that is polymerized polymeric sheets. The latter has been achieved by hitherto known processes either by means of a direct, more or less one-dimensional mechanical stretching, of the type utilized in the above mentioned technical solution #3 Group (Nitto, Sumitomo,...), or by means of a homogeneous, two-dimensional stretching of the thermoplastic polymeric sheet in the vicinity of the glass phase transition of the employed polymer, which is characteristic for the #1 Group of the above itemized known technical solutions – Uchida, Stanley, .... The claimed process does not require technically sophisticated equipment for the controlled mechanical stretching. It enables mass production, and furthermore, may be adapted in such a manner, that the obtained negatively birefringent polymer layer exerts simultaneously a bonding action, that is the adhesion and the optical contact between the LCD cell, and the polarizing filter.

Page 14, lines 7-18, amend the paragraph as follows:

The expression [[<freezes>]] "freezes" is employed in the meaning of [[<hardens>]] "hardens" or [[<becomes

rigid>]] "becomes rigid" respectively. After the polymerization the rigid boundary plates are optionally removed. The obtained optically negatively birefringent polymer layer may be utilized as an autonomous optically negatively birefringent element in various applications. In superior articles, for example in protecting welding filters, which are predominantly multi-layer laminates made of different layers, such as infrared light reflectors, polarization filters, and the like, the boundary layers may be provided by the individual elements of such optical assembly, and the above-described polymeric layer acts supplementary to the optical angular compensation of the homeotropically oriented LC molecules simultaneously as a bonding layer and as an ~~optical~~ optical contact.

Pages 18-19, bridging paragraph, amend the paragraph as follows:

The conditions in the manufacture of the shutter should be strictly controlled, in conformance with the described process of manufacturing the optically negatively birefringent polymer layer, in respect of the working Examples Aa and Ab, as well as in respect of the mechanical construction, which has to secure a strictly defined and

controlled thickness of the layer, for example 300  $\mu\text{m}$ , as well as the polymerization conditions: temperature profile, UV light illumination procedure, so that the optically negative birefringence is induced in the polymer layer 3 during the polymerization. The appropriate performance of the whole process, that is with soft spacers or the multi-stage polymerization enables the perpendicular orientation of the principal axis of the refractive index tensor with respect to the layer. If simultaneously its optical thickness is such, that the integral optical thickness, that is the multiplication product of the birefringence and the thickness of the layer ( $\Delta n_{\text{polymer}} \times d_{\text{polymer}}$ ), of this layer and the optical thickness of the two polarization filters, which themselves exhibit slightly optically negatively birefringent characteristics, is equal to the optical thickness of the homeotropically oriented liquid crystal layer, that is the multiplication product of the birefringence and the thickness of the layer ( $\Delta n_{\text{LC}} \times d_{\text{LC}}$ ), the requirement for the compensation of the angular dependence of the contrast/attenuation of the LC shutter is fulfilled. In addition to this basic function the ~~said~~ layer also combines the two subcomponents into a

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mechanically and optically uniform assembly, and ensures the  
optical contact.